

**METHODS OF SAMPLING AND TESTING**  
**MT 304-04**  
**MOISTURE TEST ON PLANT MIX**  
**BITUMINOUS SURFACING AGGREGATES**  
*(Montana Method)*

**1 Scope:**

- 1.1** This procedure is to be followed in sampling and testing plant mix bituminous surfacing aggregates for moisture content. This method is to serve as a guideline to control the variable moisture content.

**2 Procedure:**

- 2.1** Obtain a representative sample of at least 1.36 kilograms (three pounds) from each bin. Immediately place the material, from each separate bin, into a weighed container and seal.
- 2.2** After weighing the container with aggregate, transfer the material to drying pans and dry to constant weight in an approved manner. The sample should be stirred occasionally to facilitate drying, which should proceed for at least an hour.
- 2.3** On completion of the drying process, reweigh sample and container.
- 2.4** Compute the moisture content of each sample of the aggregate using the following formula:

$$M = \frac{W - D}{D - C} = 100$$

where:

$M$  = percent of moisture

$W$  = wt. of wet sample and container

$D$  = wt. of dry sample and container

$C$  = wt. of container

- 2.5** Compute the composite moisture content of the total aggregate according to the following example:

Aggregate Size	Fraction of Job Mix		Moisture Content, Percent
3/4" to 3/8"	.20	x	2.00 = 0.40
3/8" to No. 10	.40	x	1.00 = 0.40
Passing No. 10	.40	x	0.50 = <u>0.20</u>
Composite Moisture Content			= 1.00

- 2.6** A composite moisture content should be determined after the plant has attained a steady rate of production.

**3 Additional Tests:**

- 3.1** If the composite moisture content is not excessive, no additional tests will be required unless plant production rate is greatly increased, moisture content of the aggregate source increases, or if any of the following conditions arise:

**3 Additional Tests:** (continued)

- 3.1.1 Foaming on the surface of the coarse aggregate particles,
  - 3.1.2 Excessive slumping of the mix in the truck,
  - 3.1.3 Condensed water dripping from the truck box, and
  - 3.1.4 Bubbles or blisters forming on the surface immediately behind the paver.
- 3.2 Ordinarily these conditions will not develop if the moisture content is below approximately 2 percent.

**4 Corrective Action:**

- 4.1 If a test reveals excessive moisture content, corrective action is to be taken at once and the Construction Bureau is to be notified immediately by telephone.